

3M™ Thermally Conductive Heat Spreading Tape (TCoHST) 9876-10 and 9876-15

Product Description

3M™ Thermally Conductive Heat Spreading Tape (TCoHST) 9876 is designed to provide excellent heat spreading performance on plane direction for stimulation of quick heat dissipation with a preferential heat-transfer path between heat-generating components and designated cooling devices (e.g., heat sink, fans, heat pipes and metal frame).

Generally, heat spreaders conduct to distribute thermal energy from a heat-generating component to another location where the heat can be removed through a heat dissipation mechanism. Focused on increasing the X-Y direction thermal conductivity to enhance heat spreading, 3M tape 9876 is designated to solve the limitation of existing products. The multi layered metal heat spreader provides following benefits;

1. Preferential X-Y thermal conductivity – 3M tape 9876 promotes heat spreading on plane direction and minimizes effective total heat conduction on Z-axis.
2. Good adhesion performance – The 3M tape 9876 uses a high performance acrylic PSA for excellent adhesion to many substrates.
3. High thermal conductivity in X-Y direction – The thermal conductivity is proportionate to the effective thermal heat spreading performance of the metal foil layer(s).
4. Flexibility – The pressure sensitive adhesive layers provide flexibility to the laminate and improves the workability.
5. Excellent electrical insulation – 3M tape 9876 has a thin, permanent polymeric cover film that provides for electrical isolation to the heat spreading metal top surface, provides for easier handling of the 3M tape 9876 and reduces product deformation during handling.
6. No debris, No need for sealing, 3M tape 9876 can be die cut with no loose debris or potential for burrs or slivers.

This product does not contain any banned chemical, heavy metal, halogen compounds or other restricted materials.

There are two thicknesses available. 3M tape 9876-10 is 100 μ m and 3M tape 9876-15 is 150 μ m.

Key Features

- Excellent thermal conductivity on plane direction (>250W/m-K).
- Selective thermal spreading path for uniform heat distribution.
- Excellent flexibility without any wrinkle and bending by fold.
- Excellent electrical insulation.
- Excellent adhesion performance against Al and SUS.
- Easy workability and handling convenience (easy die cut).



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Product Construction

Product	3M™ Thermally Conductive Heat Spreading Tape (TCoHST)	
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Adhesive Type	Acrylic Adhesive	
Thickness (mm)	0.100	0.150
Density (g/cm ³)	5.0	5.2
Base Material	Copper	
Product Liner	Release Coated White Paper Liner	
Roll Length	Standard: 50MT (Custom size can be supplied by request)	

Application Ideas

- Heat spreading sheet on FPD (Flat Panel Display) for thin, space constrained devices.
 - LCD with LED BLUE
 - PEP Module
 - OLED Module
- Thermal spreading/conduction on Lighting, ECU, Solar Cell, 2nd Battery and Electrical Recharger Module
- Heat Distribution on LED module/ board
- Small display for MHO as OLE
- COG Chip Thermal Management for Uniform Temperature

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Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Product	3M™ Thermally Conductive Heat Spreading Tape (TCoHST)	
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90 Angle Peel Adhesion (3M Test Method) Crosshead speed: 508mm/min Initial (15min dwell at RT) Heat aging (72 hr dwell at 70°C) SUS 304 test substrate	Unit: Kg/12.7 mm width	
	> 1.0	> 1.2
	> 2.5	> 2.5
Static Shear (3M Test Method) 500 gram/inch ² at RT 250 gram/inch ² at 70°C (holding for 10,000 min)	PASS	PASS
	PASS	PASS
Thermal Conductivity (3M Test Method) (X-Y / Z-axis; W/m-K)	250 / 0.80	250 / 0.80
Thermal Impedance (3M Test Method) (°C-inch ² /W)	0.3	0.45
Dielectric Strength (kV) (3M Test Method)	2.9 kV/0.1mm	3.6 kV/0.15mm

Application Techniques

- 3M tape 9876 should be applied in a manner to minimize wrinkles, bubbles and folds as to maximize the heat spreading performance of the product along the desired XY plane.
- Bonding strength is dependent upon the amount of adhesive to surface contact developed. Firm application pressure helps to develop better adhesive contact and improve bonding strength.
- To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Typical surface cleaning solvents are isopropyl alcohol and water (rubbing alcohol) or heptane. **Note:** Be sure to follow manufacturer’s safety precautions and directions for use when using solvents.
- Ideal tape application temperature range is 21°C to 38°C (70°F to 100°F). Initial tape application to surfaces at temperatures below 10°C (50°F) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

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Certification/Recognition

MSDS: 3M has not prepared a MSDS for this product which is not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, the product should not present a health and safety hazard. However, use or processing of the product in a manner not in accordance with the directions for use may affect its performance and present potential health and safety hazards.

TSCA: This product is defined as an article under the Toxic Substances Control Act and therefore, it is exempt from inventory listing requirements.

RoHs Complaint/REACH Compliant: This product complies with the European Union's "Restriction of Hazardous Substances" (RoHs) initiative and with European REACH regulations 2002/95/EC and 2005/618/EC.

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-251-8634. Address correspondence to: 3M, Electronics Markets Materials Division, 3M Center, Building 225-3S-06, St. Paul, MN 55144-1000. Our fax number is 651-778-4244 or 1-877-369-2923. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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Electronics Markets Materials Division

3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
1-800-251-8634 phone
651-778-4244 fax
www.3M.com/electronics

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